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ABSTRACT

This booklet describes a project that converted a 45-year-old school building designed for self-contained classrooms into an open-plan learning center. Purposes of the project were better use of available space to accomodate more students and creation of a warm, flexible learning environment suitable for a nongraded open education approach. As part of Project LEM, three sections of Fanny Meyer Hillers School in Hackensack, New Jersey were remodeled, one section at a time, over three years. No major structural changes were made to the buildings, but nonbearing walls were eliminated and doors were removed to open up the building and encourage movement between different learning areas. In addition, corridors, storerooms, stairwells, and similar spaces were converted to art bays, reading bays, and other learning areas. These changes increased student capacity of the buildings by 25 to 33 percent at a relatively low cost, while also permitting adoption of a more flexible and innovative educational program. (JG)

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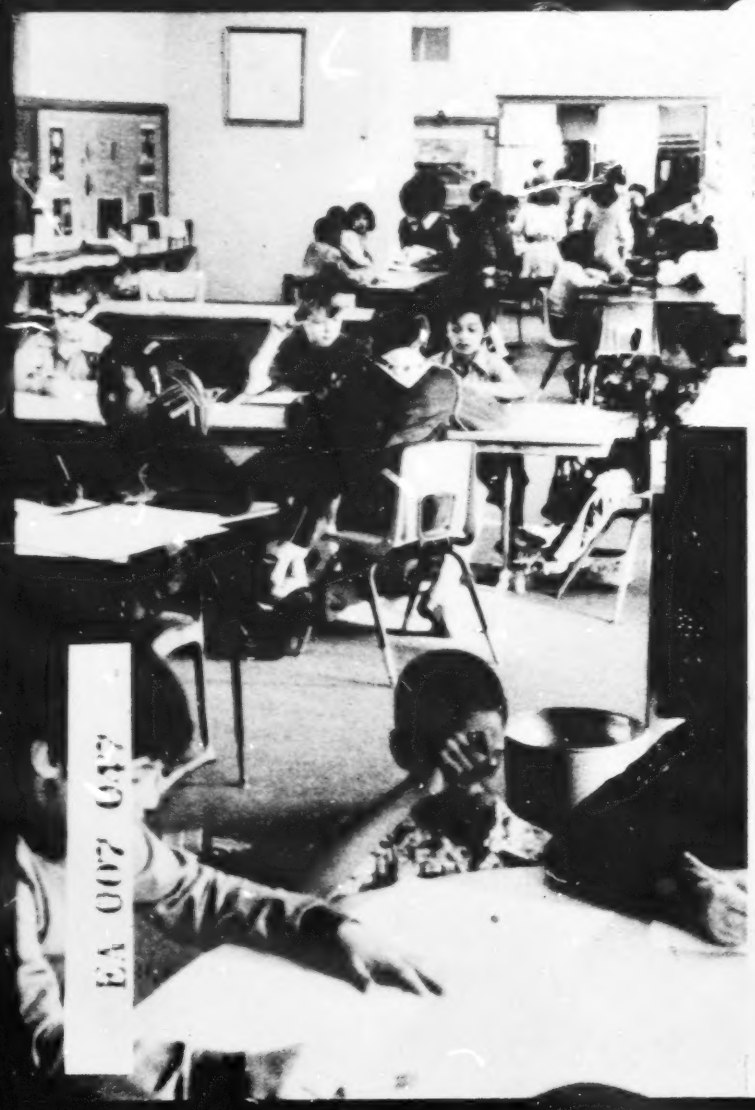
"Old walls should not stifle new ideas. Identical boxes must not enforce the same program on all students and teachers; each is a distinct individual. Fixed furnishings must not quash spontaneous inquiry. Dismal, spiritless, and uniform decors must not blight a child's creativity..."[1]



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EDUCATION

Project LEM Environment and Space Utilization

•Hackensack Public Schools
Hackensack, New Jersey

The "LEM OVERVIEW AND EVALUATION" folder, 1972, covered this Title III project in innovative education "in the round." Now this particular folder picks up from there and covers in greater depth the open classroom environment characteristic of the LEM approach and the educational facilities conducive to it.

"The primary basis for evaluating a school should be whether the students and teachers find it a satisfying place to be."[2]

INTRODUCTION

Educators are demonstrating an increased concern that each child should develop a positive self-image. This sensitivity to the child's need for dignity, acceptance, involvement, and his feeling of success is reflected in both the program and environment of Project LEM. The acquisition of academics and the development of character have proven to be successful in a learning environment that provides appropriate learning activities within a warm and friendly atmosphere.

In order to meet the goals of American education it is necessary that the learning environment provide a message that is in agreement with these goals. If concern for others is a major objective, then the child's learning environment should say that to him. If respect for the dignity of each person is a goal, then the educational program should reflect this.

The LEM approach achieves the goal of providing a learning environment that assists each child to gain the academic skills and positive feelings that will result in a concerned, sensitive, and competent person. LEM combines a personalized learning program that encourages the development of individual differences, with an informal teacher-pupil relationship and fluidity of space. Here Johnny learns to read, to write, to draw, to compute, to reason, to understand, to plan, to search, to explore, to share, *and to discover that he is a person.*

WHY THE OPEN SPACE APPROACH?

A child's most influential partner in learning is his environment, and during the hours of 9-to-3 for many a crucial year a major portion of that environment is the classroom. What type of environment should it provide? What type of appeal should the classroom offer youngsters today? What opportunities should it foster for young citizens of tomorrow? What messages should it be sending?

Our educational goals are known. However, to characterize many schools of today educators are using terms such as: rigidity, sterility, passivity, starkness, immobility, joylessness, constraint. *These are exactly the characteristics innovating educators want to overcome and to avoid as new programs are designed and developed.*

Project LEM has succeeded in creating a wholesome learning environment — one characterized by adaptable space, lack of tension, a sense of sharing among teachers and pupils alike, and permeated by a genuine concern for the individual development of each child.

As Eleanor Russo, director of Project LEM, describes it:

> "I like the feeling one gets upon walking into the LEM. Somehow it exudes a warmth . . . a concern . . . a sense of children profitably engaged in a variety of activities. It's bubbling. It hums. There's interest, and love, and above all — a belief in the kids."

The non-graded approach contributes to this more relaxed emotional environment of the open classroom, giving the young pupil the feeling that he is being respected as an individual, rather than constantly being compared to others. In such an atmosphere, a child has to feel more at ease, more accepted, and more involved. Therefore under less tension, he functions better and his personality has a chance to unfold.

Amid physical facilities that enable teachers to work in teams and use space in a flexible manner, *both teacher and learner* are able to work enthusiastically to help nuture the skills, attitudes, and confidence needed in growth toward maturity. When the environment is designed for active learning, less energy and attention is required to maintain order; more concern can be directed at accomplishing human and academic goals — *exploring, helping, guiding, and building rather than merely containing.*

The educational program should play the determining role in the utilization of space. When the use of space and the humanistic approach are combined, it enables teachers and learners to develop *an atmosphere of learning* rather than an attitude of simply attending school. The school's experience is more than dealing with pupils. It's dealing with "the lives of children." The LEM approach reflects that conviction.

[1] EDUCATIONAL CHANGE AND ARCHITECTURAL CONSEQUENCES A Report from Educational Facilities Labratories N.Y.C., 1969, p. 16

[2] Christopher Jencks, "THE SCHOOLS AND EQUAL OPPORTUNITY," Saturday Review of Education, September 16, 1972.

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THE PARTS THAT MAKE UP THE TOTAL ENVIRONMENT

The essence of LEM is its utter simplicity. If there is one basic thrust, it is to present an environment that does not dwarf and dominate the child; but rather, one that provides him with a feeling of comfort, control, and growth.

Education is dynamic, on-going, and personal. Recognizing this, the facilities, the furniture and the staffing pattern of LEM were determined by the design of the educational program. The flexible use of space in LEM utilizes variable arrangements of learning centers appropriate to meeting these needs. Consideration was given to designing an environment that is visually and acoustically appropriate and so reflective of sensitivity that it becomes an appealing, and human environment for learning.

What aspects contribute to such an environment?

SOUND

A motionless, silent classroom does not indicate nor necessarily generate a learning atmosphere. In such an environment, every little unintended sound becomes a distraction. By the same token, neither does movement and sound automatically mean that learning is occurring. Somewhere in between is the "hum of activity" that is characteristic of LEM.

In LEM there's sound . . . the sound of things being done . . . the sound of children happily learning. Within the LEM, many children are working in groups, yet one can enjoy a degree of privacy, carry on a group conversation without bothering others or being bothered by them. Sound-dampening was produced through the use of carpeting, spacing between learning groups, the shape and texture of display sections and acoustical ceilings.

FURNITURE

Opportunities offered by the open plan enable both teachers and pupils to flow from one area to another . . . from hustle to quiet . . . from a large group activity to small groups, to private conferences, to individual study. Such mobility requires varying lightweight, movable furniture.

In the LEM area, chairs are separate and stackable. Tables are easily movable. Stacking of furniture opens up areas of floor space for group activities, or perhaps, for simply sitting on that soft, inviting carpet. The use of small tables instead of desks encourages children to sit in small clusters to share and work together.

Perhaps the single biggest difference in the furniture is *that everything moves*, a far cry from the atmosphere where desks were literally screwed in place. The learning area of LEM may be shaped and reshaped almost instantly by merely pushing . . . pulling . . . rolling . . . or lifting the furniture and equipment.

Each LEM area has its own Living Room Center — if only a couch and a couple of stuffed chairs — so the youngsters can sense, share and enjoy a social environment, not just desks, and chairs, and work tables.

Children also enjoy soft comfortable areas; smaller group spaces designed as forts and houses; personal spaces in which "to escape"; spaces to act out social roles. Playhouses made from cardboard . . . decorated appliance cartons . . . material scraps . . . cushions . . . pillows . . . boxes stacked as bookcases — all are used as "fun" type supplements to the basic classroom furniture of portable, personal desks and large work tables.

COLORS AND TEXTURES

The visual impact of a classroom is paramount in its effectiveness as a learning environment. Important to the design are the use of color, textures, lighting, changes in levels and scale, and the placement of objects and mobiles. All contribute to establishing a warm tone and informal mood for the total learning environment.

Because children live in a colorful world, it's important that their 9-to-3 world be competitively attractive. Variety in both color and texture makes it easy to avoid the overly antiseptic or dully monochrome look. Cellophane stained glass, flags and banners, a magazine or cloth collage, colored fabrics, super graphics — are just a few of the possibilities once the paint brush has been put down. Materials as simple as expanded polystyrene, Mylar or fake fur provide interesting textural experiences, especially for young children.

DISPLAYS

Test papers neatly hung around the room, like desks neatly arranged in rows, are not found in the LEM educational environment. Here the purpose of displays is to show and add to what's going on, and to do so as interestingly as possible. If dimensional effects can be achieved, so much the better.

The display of material is important and features not only art projects done by the students, but also includes fabrics, objects, you-name-it, which for their esthetic or interest value have been brought in by the teachers, by the pupils, or even by their parents.

Whatever is displayed — be it a mural depicting a field trip, a diorama about a book read, or an exhibit of commercial material — has been determined to be of interest to the kids, current, and motivational as well as informative. In LEM, teachers use displays to capture a child's curiosity and to attract him into new areas of investigation and learning.

INDOORS-OUTDOORS

The LEM approach lends itself to a "spilling" of activities beyond the walls of the room. There's a natural indoor-outdoor flow involving the use of the total area, including the grounds around the school. The coming of Spring can see plants that had been growing in the science bay all winter planted by happy hands in the outdoor "garden." Workbenches and easels placed outdoors set busy hands to creating items of interest and young artists to capturing nature on canvas.

Youngsters are not assigned to a desk in LEM, nor are they restricted to a specific place in the room for the total day's activities. When not assigned to a specific area for academic studies, children may choose to work indoors or out in order to participate in any of the planned and varied activities that relate to their interests.

The intent is to have the youngsters think and see beyond the desk . . . beyond the classroom . . . beyond the schoolhouse . . . beyond the community . . . and, eventually, even beyond that.

SPACE UTILIZATION

The amount of space available is often beyond the control of the teachers and school administrators, but use of the available space should reflect the plans of the staff relative to the way in which educational objectives will be sought.

The logistics problem LEM faced was the basic one of redesigning existing facilities to permit a preferred educational approach and to relieve a crucial problem of overcrowdedness — and to do so within modest budget limitations. LEM uses space to provide flexibility of program and to increase the number of pupils it's possible to accommodate.

LEM began with a direction — to change a forty-five year old building designed for self-contained classrooms into an open-education plan. The degree of openness possible was determined by bearing walls between classrooms and corridor which couldn't be removed; but curtain walls between classrooms could and were removed, so LEM concentrated on redesigning the gained space for maximum advantage.

The plan was to combine the total square footage in each area originally designed for traditional classrooms with the connecting corridor and convert this into a unified learning center. All available space became teaching and learning space. Unconstrained by fixed furniture and separating walls, the LEM area becomes an environment that is fluid and open: one that can be arranged and rearranged to fit the objectives and individualities of both pupils and teachers, as well as the program, itself.

In redesigning existing facilities, there were the basic changes required to open up space — knocking down walls, installing acoustical ceilings, new lighting, and carpeting the area. In addition, attention had to be paid to the particular characteristics of each area which could contribute to the learning environment desired.

Although each LEM area offered different physical facilities, was a different type of area and in different parts of the building, each was redesigned to achieve three specific goals:

1. To create the desired open plan environment
2. To accommodate a 25% increase in student population
3. To foster team teaching for large and small group instruction.

Because it has achieved these goals, Bernard Kaminsky, principal of the Fanny Meyer Hillers School, believes, that in responding to the problems of overcrowdedness and the learning needs of children, *the LEM way is costing less to develop than it's costing other schools in both dollars and program not to do it.*

In comparison to alternate methods of solving overcrowdedness — renting outside facilities or purchasing portable classrooms — the LEM approach certainly costs no more and offers one significant additional advantage. *Here is an improved permanent structure, not temporary teaching quarters. As such, its tangible value will remain for years.*

CHANGING SPACE WITHIN EXISTING FACILITIES

Conversion of older school buildings to accommodate current educational programs and increased pupil enrollment can be achieved at less cost than renting portable facilities to serve the same number of additional students.

Many a school administrator has felt thwarted in trying to effect educational practices because "the building wouldn't get out of the way." Yet when attempting modernization based on well defined educational goals, a professional team can deliver a modernized building that will be an asset to the school community for years to come.

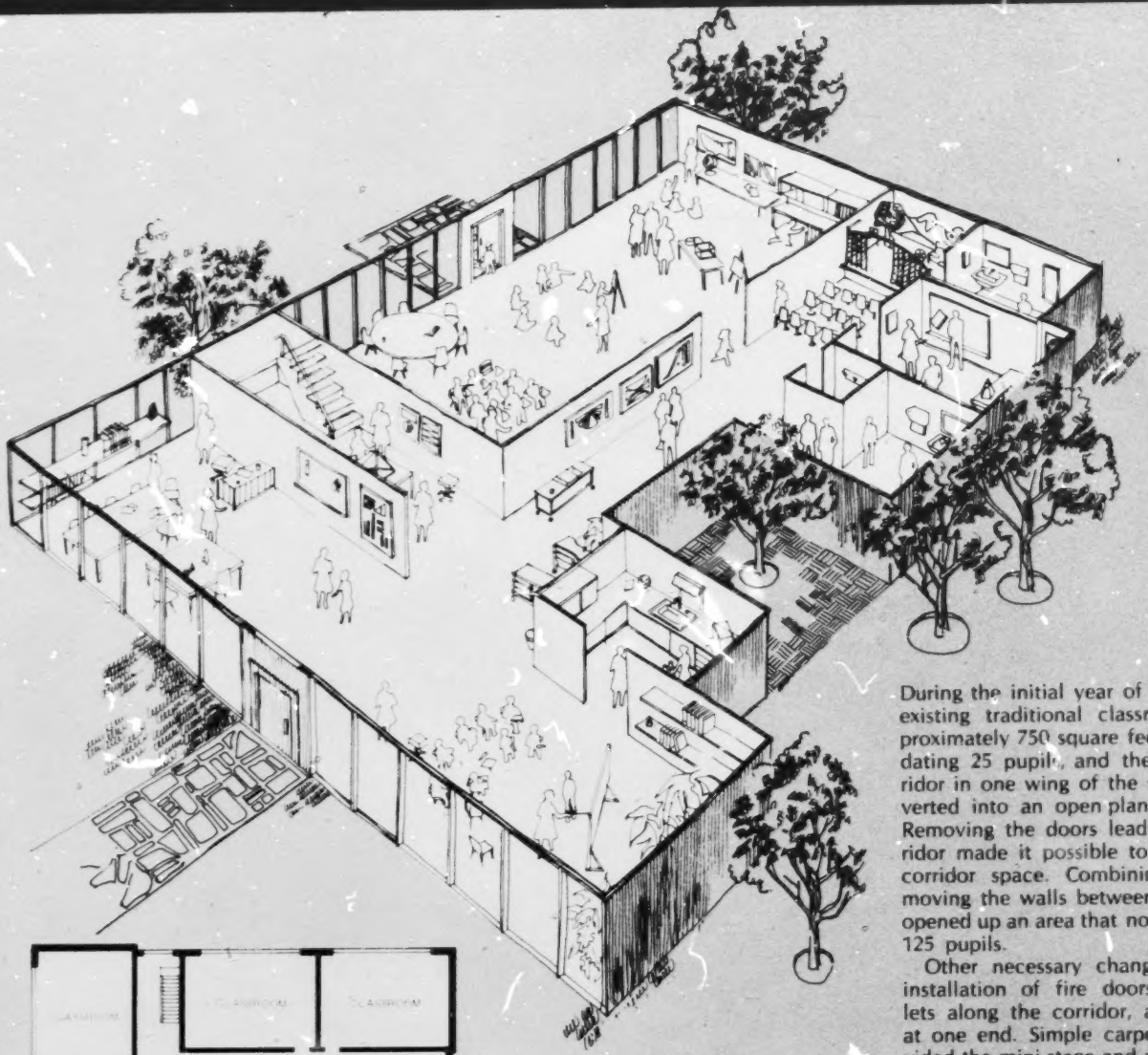
Because at that time the outer walls of the Fanny M. Hillers Elementary School could not be extended, the staff stretched its imagination to meet the educational challenges of the '70's. In three successive years, in three different ways, the needed physical environment — the desired open plan approach — was achieved with modest expenditures.

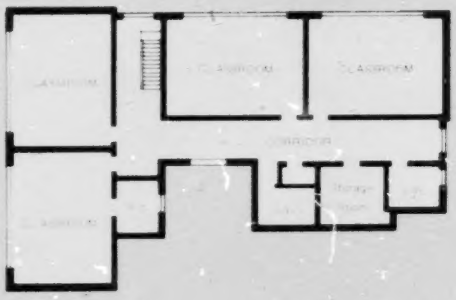
It took more than a couple of walls tumbling down to create LEM. Mostly, it took a lot of effort. But it proved worthwhile, for as one of the teachers, with a slight help from show business, commented: *"With LEM, the school comes alive with the sound of learning."*

TECHNICAL REQUIREMENTS

When considering any construction changes, the plans must meet the standards of the N.J. State Department of Education as described in its "GUIDE FOR SCHOOL-HOUSE PLANNING AND CONSTRUCTION."

For any changes involving the removal of walls or the use of a corridor as a learning area, educational plans along with a detailed sketch must be submitted to the Division of School Planning Service in Trenton. Normally, minor changes are approved without the requirement of an architect's seal. However, for extensive changes, the school administrator has to submit plans sufficiently detailed to enable his Board of Education to consult with an architect. It's not a complicated procedure, as LEM has proven three times.





LEM I

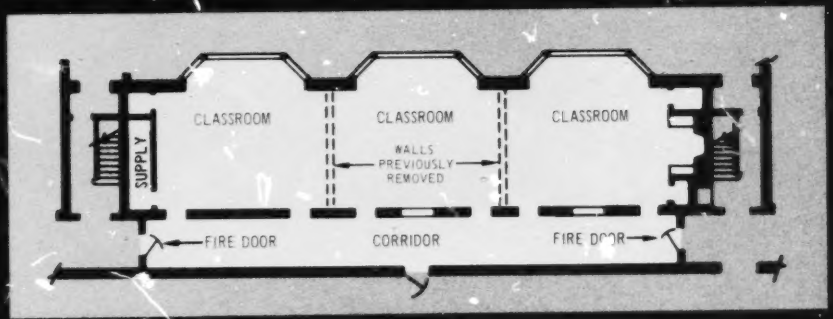
During the initial year of the project, four existing traditional classrooms, each approximately 750 square feet and accommodating 25 pupils, and the connecting corridor in one wing of the school were converted into an open plan learning center. Removing the doors leading into the corridor made it possible to fully utilize the corridor space. Combining this with removing the walls between the classrooms, opened up an area that now accommodates 125 pupils.

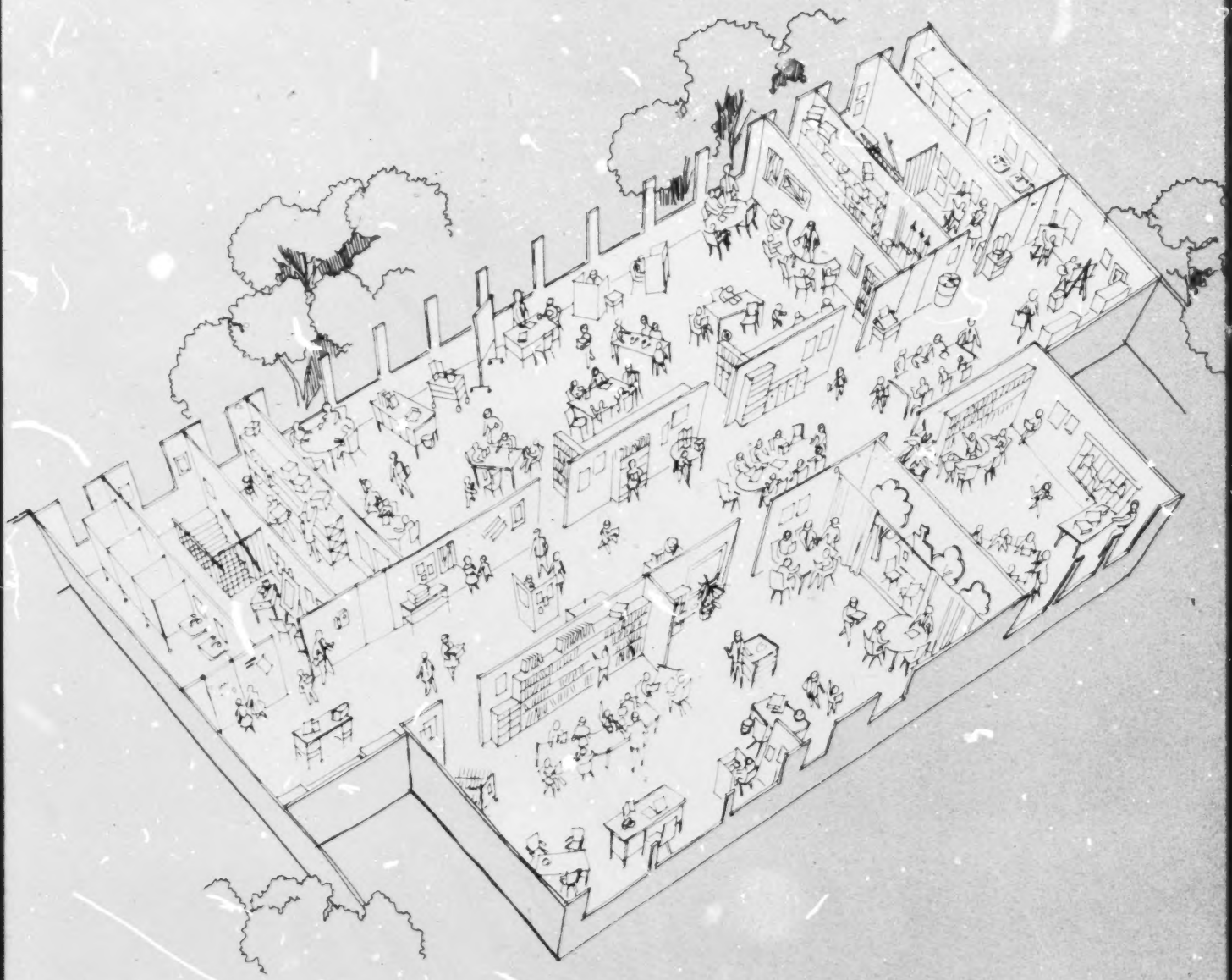
Other necessary changes included the installation of fire doors, electrical outlets along the corridor, and a stage area at one end. Simple carpentry chores provided the mini-stage and any needed shelving. A storeroom became a staff office-workroom. Carpeting throughout the classrooms and the corridor enhanced the open plan design, while applying fresh paint, in bright colors, completed the modifications.

LEM II

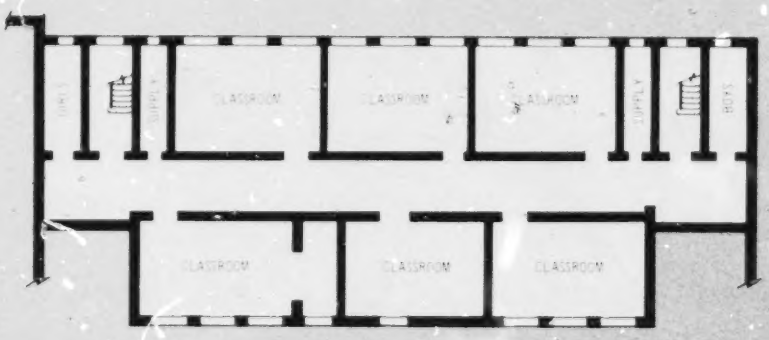
The establishment of this learning center was accomplished by combining a corridor with an already existing open classroom area adjacent to it. The space previously accommodated 75 youngsters. After the change, it was able to meet the needs of 100 — a 33⅓% increase!

No walls had to be removed, but a fire door had to be built at each end of the corridor. An acoustical ceiling and side wall lighting were installed in the corridor section. Doors leading from the large room into the corridor were removed and the entire area carpeted. A living room center was planned and completed with an existing fireplace as its center. A kitchen-staff workroom was achieved through the use of a storeroom adjacent to the corridor.





LEM III



An entire floor of the Fanny M. Hillers School, consisting of six classrooms flanking a central corridor, became LEM III. Walls were removed between existing classrooms, a stage area constructed, acoustical ceilings, electrical outlets and new lighting were installed, plus carpeting throughout. One former classroom was maintained for use as both a staff workroom and a quiet learning area for the children.

WHERE DOES THE EXTRA SPACE COME FROM?

In 1970, school budget limitations would not permit new construction. Still the problem of overcrowdedness had to be faced, with the needed additional space to be found within the school itself.

Converting the corridors, and combining the corridor with the classrooms was the single biggest contributor to added space. It was also the easiest change and the most obvious. By utilizing the "nooks and crannies" — areas that formerly were non-teaching areas — needed room was obtained. The end of the corridor . . . the cloakrooms . . . storage areas . . . all became part of LEM.

In effect, space came from two distinct sources:

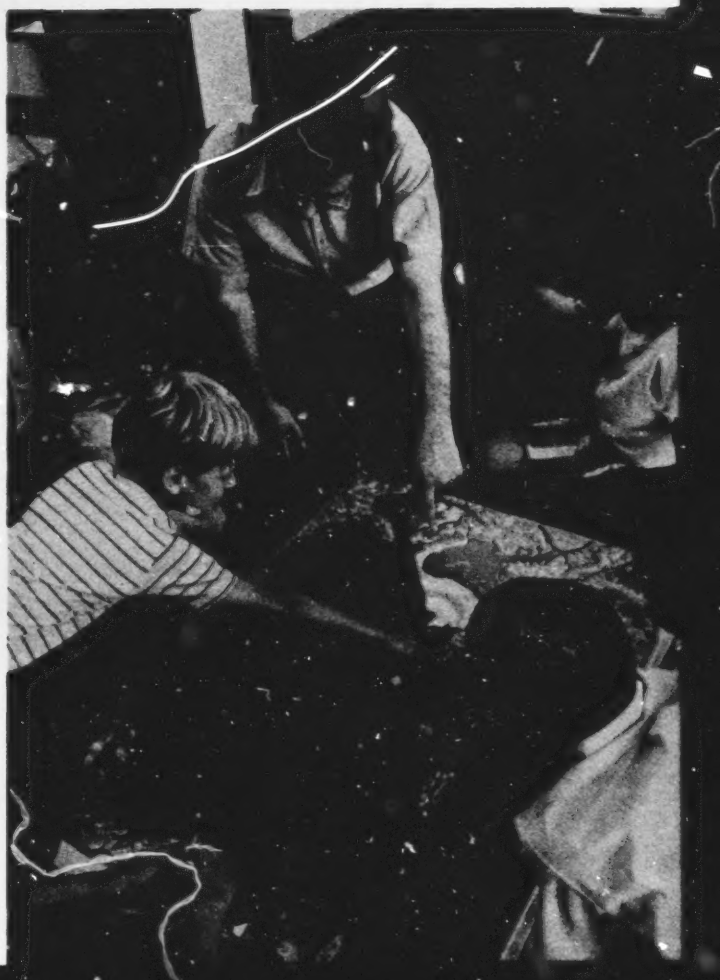
1. SPACE CONVERSION — where space that was not formerly used as everyday learning areas was now put to such use.
2. SPACE UTILIZATION — where more use was gained by redesigning the available classroom space.

In the LEM approach, space is created and defined rather than constructed. Though there is a flow of activity and considerable change in the morning and afternoon use of learning areas, there are special interest areas that retain their own identity, intentionally so. The science bay, the mini-stage, the art bay, the kitchen-cooking area are examples. Each reflects its individual activity. It was in helping to provide such special interest bays that those "nooks and crannies" were put to their best use.

That little-used area alongside the stairwell became an ideal spot for the art bay. Designed as a wet area, no carpeting was provided. Easels are easily set up, painting supplies kept readily available, and plenty of room handy for displaying the children's work.

The mini-stage puts drama into the hands of the kids, and puts them within inches of their audience. Unlike the formal auditorium stage where performances require rehearsals and time-consuming practices, the mini-stage is free flowing and non-threatening. And being so, it's put to use regularly.

Each reading bay is a comfortable and inviting quiet corner with an attractive display of books, some soft furniture and a reading lamp.



A TOTAL LEARNING ENVIRONMENT

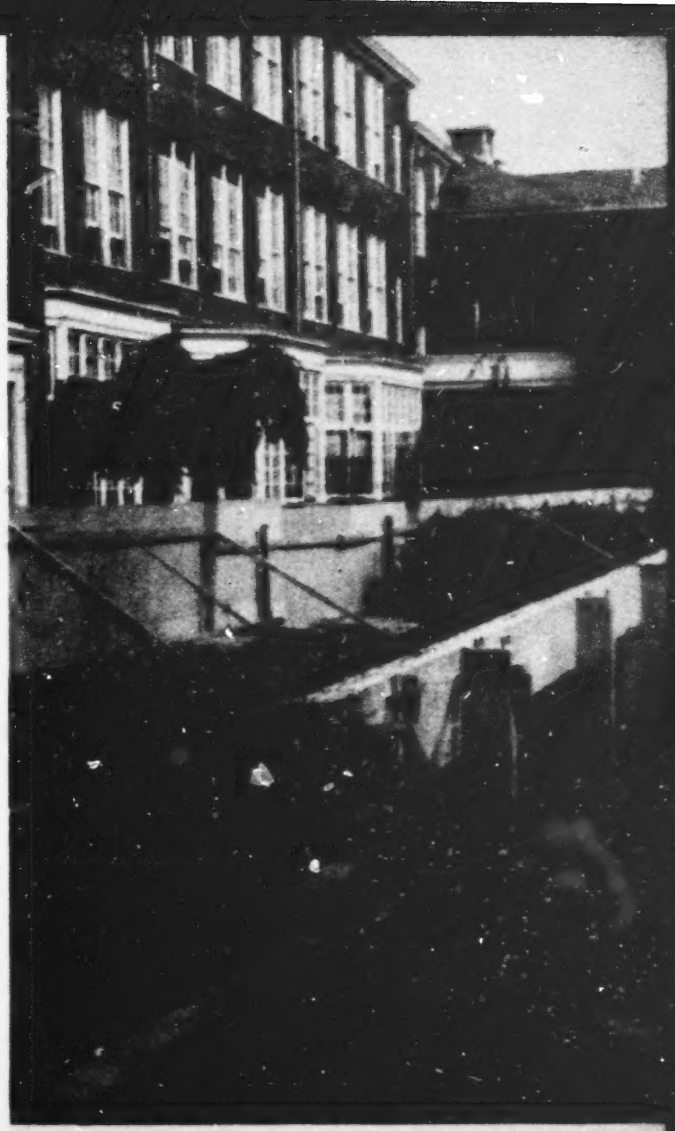
The LEM approach designed a TOTAL LEARNING ENVIRONMENT where, on a planned basis, all of the available space is used as learning areas. The scheduled program utilizes the same space in various ways at different times.

For example, during part of the day, scheduled reading-language arts groups are conducted in all areas of the LEM at the same time. During another period, the same areas that were used for reading are used for social studies, science and cultural arts.

The result — the area that was the reading "room" in the morning becomes a social studies area or a math "room" at other times of the day. There is multiple use made of the same space, and each child may enjoy the expansive atmosphere of the entire learning environment.

For years, the "box" was the ideal configuration for the uni-directional flow of information from the teacher to the student. The appearance and design of an open-plan educational environment serves a new relationship. There is a changeover from the teacher-in-front-of-the-classroom to an approach where the teacher and children move freely between varying activities and spaces. The teacher in LEM no longer has a traditional "desk," but rather, uses storage cabinets for housing pupil folders and instructional materials. However, teachers do need space for team planning, teacher meetings, and a place to meet with their students and the parents. In each LEM, such an office area is part of the total environment, sometimes separated from the learning areas by filing cabinets, or in some instances, housed in former storage rooms.

Learning stations also require some type of dividers. In LEM, movable storage cabinets, chalkboards and tackboards serve the purpose. Strategically positioned and properly angled, they divide the space as required for pupil activity without blocking the teacher's view or creating walls. Such flexible space dividers permit redesigning of space. Rolling storage units do more than simply divide space. They house clothing, musical instruments, tote trays, art supplies, and most anything that needs "putting away."



LEM IV:

In late 1972, ground was broken a few yards away for a new extension to the Fanny M. Hillers School. The extension will provide another LEM. In a way, it's a "P.S." on the LEM story because the people involved with LEM were initially concerned with opportunities in determining appropriate open-plan facilities in an existing building. LEM IV reflects LEM thinking and efforts in the construction of a new facility. Wishes now have a chance of becoming reality — from the ground up.

Project LEM, Learning Experience Module
Hackensack, New Jersey

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